Food and Agriculture Organization of the United Nations

SEPAL, a big-data platform for forest and land monitoring

Powering innovation and application in the use of satellite imagery for natural resource management

Working

to meet the urgent need for innovative systems that enable accurate, efficient, and cost-effective monitoring and reporting of forest and land cover;

with 5 500 users from 180 countries;

thanks to Norway's International Climate and Forest Initiative and the community of users providing feedback for continuous improvement.

Accurate information is critical for natural resources to be managed sustainably. Developed by the Food and Agriculture Organization of the United Nations (FAO), SEPAL - System for Earth Observation Data Access, Processing and Analysis for Land Monitoring - helps countries monitor and report on forests and land use. SEPAL offers users unparalleled access to satellite data, an easy to use interface, and powered by cloud-based super computers, paving the way for improved climate change mitigation plans and data-driven land-use policies.

SEPAL serves and empowers thousands of users, including government agencies, research organizations, non-governmental organizations, companies and academia in over 180 countries around the world to gain a better understanding of land cover dynamics using the data, processing capacity and analytical possibilities offered in SEPAL.

SEPAL users can process and analyze satellite imagery from Planet, Landsat, Sentinel and ALOS, taking advantage of the high temporal and spatial resolution of the Planet imagery, historical archive of Landsat imagery, frequency of the Sentinel-2 imagery and cloud penetrating abilities of Sentinel-1 and ALOS.

Around the world, SEPAL is being used to

- **detect and monitor forest degradation.** Uganda, Equatorial Guinea and Ethiopia are using SEPAL to monitor degradation in dry and humid tropical forests;
- **map deforestation** in many countries from Bhutan to Ecuador. SEPAL enables improved accuracy, consistency and efficiency in pinpointing forest area change, powering early warning systems for deforestation as well as forest fires;
- **monitor ecosystem restoration efforts.** Indonesia is using SEPAL to monitor peat moisture content as part of efforts to protect and restore peatlands. SEPAL is also being used to track reforestation efforts in the Lower Mekong region.

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IT

OVERLOAD of Information due to large satellite imagery archives available from various sources

SIMPLE search interface puts the pixels users need immediately to use

INFREQUENT updates of maps and poor quality input data

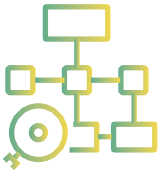
HIGH temporal and spatial resolution imagery that can be used in dense time series to create consistent and frequently updated data

LIMITED storage and processing capability on desktop computers

CLOUD-BASED hosting and processing that doesn't overload users' devices

SLOW processing speed that limits countries' progress in forest monitoring

FAST processing thanks to super computing power; enabling large-scale analyses



DISPERSED access to methods and algortihms to measure various land-use changes and categories

INNOVATIVE, easy to access applications for immediate, step-by-step processing of common land monitoring procedures

RESTRICTED access that allows users to access data only on their computers

CONVENIENCE of accessing SEPAL anywhere with an internet connection, even mobile phones

DIFFICULT to develop and distribute useful ideas/methods to be quickly implemented

POSSIBILITY to develop and distribute functionality to users globally, for example to measure soil moisture, restoration and forest degradation

CHALLENGING to maintain desktop system updated with modules, dependencies, etc.

SEAMLESS automatic updates to system requirements ensure platform is ready to run and code works

Access SEPAL from your browser at sepal.io

If you have any questions about SEPAL, email us at NFM@fao.org or post here: www.openforis.org/support

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NICFI
Norway's International Climate and Forest Initiative

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